

On the synonymy and distribution of *Wigginsia wigginsi* de Laubenfels, 1953 (Porifera, Demospongiae: Acarnidae)

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The holotype of *Plocamia fragilis* Koltun, 1959 is examined. *P. fragilis* is shown to be a junior synonym of *Wigginsia wigginsi* de Laubenfels, 1953 (**new synonymy**). The species is distributed along both the American and Asian coast of North Pacific and in the Chukchi Sea.

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The present paper is based on material from the Zoological Institute (ZIN), Russian Academy of Sciences, St.Petersburg, and Museum of Institute of Marine Biology (MIMB), Far East Branch of the Russian Academy of Sciences, Vladivostok.

***Wigginsia wigginsi* de Laubenfels, 1953** (Figs 1-7)

Wigginsia wigginsi de Laubenfels, 1953: 7, fig. 4 (near Point Barrow, Alaska); Hooper, 2002a: 429, fig. 12 (near Point Barrow, Alaska).

Plocamia fragilis Koltun, 1959: 176, fig. 138, tab. XXVI, 3 (near Shikotan I., Chukchi and Okhotsk Seas), **syn. n.**; Shilov, 1997: 65 (near Commander Is.).

Material examined. **South Kuril Is.:** near Shikotan I., 55 m, sand, 15.IX.1949, "Toporok", no. 16, coll. A.F. Gur'yanova (ZIN, 4 samples, including holotype of *Plocamia fragilis* Koltun, 1959). **Japan Sea:** 45 miles south of Sovetskaya Bay, 53-56 m, 12(25).VII.1907, "Leytenant Dydymov", st. 2, coll. B.A. Heinemann (ZIN, 1 sample); 44°43'N, 136°28'E, 75 m, stones and sand, 5.VI.1996, "Prof. Kaganovskiy", st. 52, coll. V.V. Gul'bin & Yu.M. Yakovlev (MIMB, 1 sample); 45°58'N, 138°02'E, 68 m, sand and pebbles, 9.VI.1996, "Prof. Kaganovskiy", st. 75, coll. V.V. Gul'bin & Yu.M. Yakovlev (MIMB, 1 sample). **Okhotsk Sea:** Terpeniya Bay, 27.5 m, silt, 19.VI.1899, "Storozh", st. 10, coll. V.K. Brazhnikov (ZIN, 1 sample). **Chukchi Sea:** 70°45'N, 176°12'E, 47 m, sand and small stones, 4(17).VIII.1914, "Taymyr", st. 17, coll. L.M. Starokadomskiy (ZIN, 1 sample).

Description. Thickly encrusting or massive. Surface with small elevations 1 mm high. Colour in alcohol light yellow. Consistence firm, harsh.

Skeleton. Ectosomal skeleton consists of tangential layer of tylotes. Choanosomal skeleton composed of ascending multispicular tracts of large acanthostyles heavily echinated by acan-

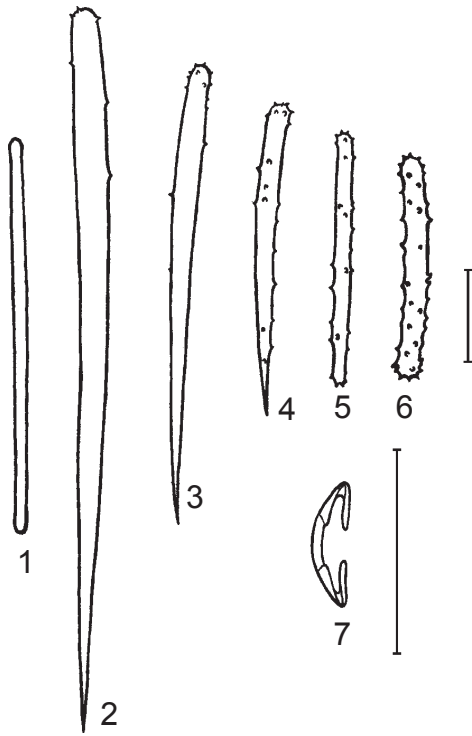
thostrongyles. The latter form parallel tracts that produce regular isodictyal reticulation. Long choanosomal acanthostyles pierce layer of ectosomal tylotes and are seen above the surface.

Spicules. Megascleres: ectosomal tylotes with slightly swollen tyles (often asymmetrical, smooth or with small spine on each base) 0.151-0.245 mm long and 0.004-0.009 mm wide; choanosomal acanthostyles (the larger with only few basal spines, the smaller more heavily spined) 0.159-0.500 mm long and 0.008-0.019 mm wide; acanthostrongyles (slightly curved) 0.133-0.178 mm long and 0.007-0.013 mm wide. Microscleres: palmate isochelae 0.025-0.036 mm long.

Distribution. Pacific wide-boreal species penetrating into the Arctic: Chukchi Sea, near Pacific coast of Commander Is. (Bering I.), Okhotsk Sea (Terpeniya Bay), near the coast of Kuril Is. (Shikotan I.), Japan Sea, and near Point Barrow off Alaska.

Biology. The species is found at depths of 27.5-250 m on sand, stones, stones and sand, sand and pebbles, sand and silt, silt.

Discussion. *Plocamia fragilis* was described by Koltun (1959) from Krabovaya Bay (Shikotan I.). At present, the generic name *Plocamia* Schmidt, 1870 is considered to be a junior synonym of *Antho* Gray, 1867, Microcionidae Carter, 1875 (Hooper, 1996; 2002b). The family Microcionidae is characterized by having ectosomal styles and subectosomal (extra-axial) regions of the skeleton. However, the ectosomal skeleton in Koltun's species is composed of tylotes arranged tangentially and the extra-axial region is not formed. So, the species should be placed in the family Acarnidae Dendy, 1922. The presence of



Figs 1-7. *Wigginsia wigginsi* de Laubenfels. 1, ectosomal tylote; 2-4, choanosomal acanthostyles; 5, 6, acanthostrongyles; 7, isochelae. Scale 50 µm.

plocamiform acanthostongyles echinating tracts of choanosomal styles forming isodictyal tracts is a diagnostic character of the genus *Wigginsia* de Laubenfels, 1953.

Examination of all specimens of the species kept at the collections of the Zoological Institute and Museum of Institute of Marine Biology has shown that ectosomal tylotes slightly vary in shape and length. Ectosomal tylotes of the spec-

imens collected near Shikotan (including the holotype of *P. fragilis*) are 0.157-0.179 mm long and usually have one small spine on the base. Tylotes of the specimens collected in Chukchi, Okhotsk and Japan Seas have no spines, being up to 0.225 mm long. In both cases, tylotes can be asymmetrical.

Koltun (1959) believed that specimens with and without spines on the tylotes belong to the same species *Plocamia fragilis*. In the description of the species, he noted that the ectosomal spicules were tornote-strongyles or tylotes and gave a drawing of smooth subtylote. The specimens with smooth tylotes completely correspond to the description of *Wigginsia wigginsi* de Laubenfels, 1953. Hence, *Plocamia fragilis* Koltun, 1959 should be considered a junior synonym of *Wigginsia wigginsi* de Laubenfels, 1953.

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